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The Post-War Period Challenges the Engineer

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Notes Chiselled on Plywood

I am getting tired of hearing about plywood. It's not that I have any particular objection to plywood as such. In fact, I am not quite sure just what it is, except that to discuss it with authority one must use the word "laminated." Yet people even less informed than I, speak with authority and prophecy of the houses and the planes, the furniture and the toys that will be made after the war of this and other construction materials previously not widely used. The new age is to be a plastic one with beetleware all over the house. The skies will roar when every family has its plane, hurtling through space. Food will come in capsules with or without a ration card—full of vitamins and minerals. A pinch of dehydrated milk will keep the milkman from the door, while a flip of the switch will start the house revolving with the sun.

Will It Make Us Humans Like "The Contented Cow?"

All these and many other similar "blessings" are promised us once the guns stop roaring. It is assumed by most who discuss these things in public that we all want them. That we will be happier and more contented human beings once we obtain such benefits of science is taken as axiomatic. I am not sure the conviction that people want or need these implements is valid.

If most individuals react as I do to the promised area of gadgets, then our post-war planners had better get busy and do something to see that the factories converted from the manufacture of war material after the war be utilized for products of a desirable nature.

The strain of living in a world in which speed and things take predecence over leisure and self-sufficiency is appalling to contemplate. We have sufficient evidence already of the encroachments of inventions and machines designed to spare us. Look at the telephone, the typewriter, or the radio to see how instruments meant to save time and effort for better things have become goads and spurs that drive us to distraction.

Home Is a Tradition

Much of the talk of things to come is, of course, sheer nonsense. Prefabricated houses that look like igloos may be desirable in areas where, for one reason or another, there is a temporary housing shortage, but the average American family is going to continue to think traditionally of his home. He will welcome improvements, to be sure —he knows the value and convenience of open plumbing, efficient heating, and good ventilation. But he is still going to yearn for pine panels and glowing hearths. Of all our social institutions there is none that needs patina more than the home. We are a mobile people, physically and socially, and the way our urbanites move from place to place is a phenomenon to astound the sociologist and other foreigners. But, even so, every American family has or wants to have an old homestead, a place where family roots are found. Note how, despite architectural improvements, the favorite style of houses in recent years have been those which suggest the past—the American Colonial, the English Tudor, etc.

We will leave to the psychologist the job of finding why this is so; but that the feeling for traditional ways in housebuilding is strong is undeniable. Robert Frost has caught one very suggestive aspect of this feeling in his poem, "The Kitchen Chimney."*

BUILDER, in building the little house
In every way you may please yourself;
But please please me in the kitchen chimney:
Don't build me a chimney upon a shelf.

However far you must go for bricks,
Whatever they cost a-piece or a pound,
Buy me enough for a full-length chimney,
And build the chimney clear from the ground.

It's not that I'm greatly afraid of fire,
But I never heard of a house that throve
(And I know of one that didn't thrive)
Where the chimney started above the stove.

And I dread that ominous stain of tar
That there always is on the papered walls,
And the smell of fire drowned in rain
That there always is when the chimney's false.

A shelf's for a clock or vase or picture,
But I don't see why it should have to bear
A chimney that only would serve to remind me
Of castles I used to build in air.

True Need versus Ballyhoo

There has been too much emphasis placed by industrial designers and manufacturers on salability and not enough in the consumer's true need and worthy desire. The policy makers of production and commerce have too often prostituted the sciences, both the applied and the social, to discover ways in which to make people want their goods desperately. The irresponsibility of American advertising is demonstrated in every issue

*New Hampshire, 1923. Page 99.

of our popular magazines and newpapers and during every hour of radio time. The ridiculous slogans that are coined, the extravagant claims that are uttered unblushingly, have achieved acceptance, thanks to a trusting public and the wanton cleverness of astute men and women. The discoveries of psychology and sociology have been pillaged to the end that shoddy goods and trivial services may be profitably sold. Our most morbid and intimate fears are probed to sell soap and we are warned of such horrors as body odor, in much the same way that a fog-bound ship is made aware of the presence of reefs and shoals that would send it to the bottom with all hands. In all history there has never been as much snobbery as there is in the perfume and cosmetic ads that offer their wares to a democratic nation. Even now, in the midst of war, products as diverse as cigarettes and hair-tonic are apt to imply that their purchase will win the war.—And Sex appeal! I need only mention that fascinating subject to conjure up the vicarious harem that the advertising fraternity has given to the American male. In fairness, it should be said that some slight beginnings have been made to the formulation of ethical standards in advertising, but to date they don't seem to have gone much beyond the curbing of snake oil claims.

Do Gadgets Lead to Frustrations?

The point is that there exist instrumentalities for forcing on the world of a desire for almost any conceivable product. If manufacturers and engineers turn their attention to gadgets, they will be sold, and millions can be made unhappy until they possess them. Shoddiness and trashiness can engulf society very easily. But if they do there will be new frustrations, new complexes, and a greater amount of unhappiness than a Peace-time world has ever seen.

And not only about the shoddy must we worry. The most masterly creations can be sources of danger to a race already oppressed by things if more of them are imposed upon us without proper regard for the nature of man. The confusion of the modern temper is all too closely related to our failure to heed in practice the warning given many times that the gifts of science are means and not ends in themselves. But, no—our measures of success are always the measures of goods acquired —the graph of pig iron ingots for the nation, the unplayed piano for the individual. "Things are in the saddle and ride mankind," said Emerson in his day, and so they have been in ours. And even now when the world has collapsed under the burden of the mass of things, we find ourselves looking for salvation to another heap of objects to be built after the war. A world that accepts its divisions into haves and havenots sees Utopia only in more having, as though there could be serenity in last year's helicopter or richness in a vitamin tablet.

Science, a Brilliant Tool, Not Aladdin's Lamp

Science with its technology is unquestionably the brilliant tool to nature's munificence. It is, too, high tribute to the genius of man. But it is not an Aladdin's lamp, to be rubbed at every whim. The war has shown us the double-edged sword it really is. The angelic aeroplane has ravaged cities and devastated countrysides, the soothing glycerin has killed millions and maimed others. But those are illustrations made obvious by blood and destruction. Less obvious are the inner pains, the moral disarray, the frustrations that flow from a technology that tempts mankind with goods that master him. What matters it that a man has a high-speed car and only a roadhouse to go to; what matters it that he can talk to Chungking and he has nothing to say? That he have warmth and shelter, varied food and protected health are fine. Insofar as science supplies these, we bless it. And to this list we add the implements of education and social understanding, relief from pain and freedom from drudgery. These are the things that give man the opportunities to go forward to the perfection of which we in the democratic tradition believe him capable. But the things that clutter, the things that burden under pretense of lifting, these we damn eternally.

Man has needs, a great many of them. They are spoken of in many different vocabularies. The sociologist examines them in terms of security, prestige, recognition, new experience; the cleric, in words of salvation and brotherhood. But, whatever the language, they should be tuned to deference and decency, to a knowledge of what he is and to what he is heir.

Let us approach this brave new world of tomorrow then with caution. Let us be sure that the plastics are moulded to forms that have meaning, that the alloys are cast into shapes that possess the true grace of honest purpose. We need not be Thoreaus and toss into the lake the ornament which only collected dust, but we can learn from him the lesson of the burden of posessions and the joys of simple living.

Otherwise we run the risk of substituting titillation for satisfaction—like the drunkard needing more and more draughts to keep our courage and to sate our jangled nerves. An urban society exacts enormous sacrifices of its members. It gives them many concentrates that are good—medical care, libraries, the arts, whatever can be

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achieved best through large-scale organization and the spending of large sums of money. But only at a price—the quickened tempo, the undue stimulation, the lack of bodily freedom, the environment artificial to an organism biologically designed to expect sun and rain. Often this price is more than can be paid, and bankruptcy follows in the form of neurosis and mental strains. Bellevue is more than a hospital in New York. It is a symbol of exhausted credit, of an enormous deficit that must be cleared before our society is truly solvent and healthy.

The Engineer Has Become Atlas

The engineer, we are told, is going to play a role of increasing importance in the immediate future. On him will rest then the terrible responsibility of removing that deficit, of bringing to social management the concern for every factor, ponderable or otherwise, that he now brings to his industrial and scientific management. Within the framework of production he has done to date a fair job. He has handled matter and energy most ingeniously in the areas to which he has been directed. When told to harness a river for its power of navigability he has done it, even if it demanded the removal of mountains; when asked to cause the desert to flower or to make the darkness light he has done so. But how well will he perform when he has to bring his training and talents to bear directly on the selection of what shall be produced and what social urges shall be fostered?

Will he then remember that man has other than material needs? Will he remember that man's environment, of which he is so much a creature, is what Lawrence R. Frank has called a "multidimensional environment" and that "we may recognize, therefore, a number of environments, namely: (a) the geographical environment of nature, (b) the internal environment of the mammalian organism, (c) the cultural environment of group life, (d) the social environment of community living."

Plastics, plywood, rocket planes, dishwashers, air-conditioning, whatever the device or gadget, must be contemplated in terms of the impact it will have on all these environments. It is not enough that the prefabricated house will keep us warm in New England's winter, or cool in Georgia's summer. It must as well make concessions to the folkways and taboos of our culture and groups. It must also avoid the negation of modern New York apartments—the dull sameness of which prompts tens of thouands of their dwellers to move each year out of sheer ennui and boredom.

There is no escape from change. It is the one constant in life and nature. Historically, I suppose, all problems whether of the individual or of the group have demanded resolution in terms of adjustment to new ways, new thoughts, new discoveries. Much of the change that has marked the evolution of history has been worthy of being considered progress. Sometimes, however, what is hailed as progress is really retrogression and on more than one occasion it has been necessary to resort to tragic means to get back to the forward movement that is history's proper course. Wars, revolution, sufferings of every sort punctuate the pages of time and warn us that there must be a delicately balanced coordination between human nature and social values.

Since the beginning of the industrial revolution, the rate of change has equaled that of the whirlwind. New tools, new techniques,—the general applications of science have buffetted us in a most bewildering fashion. We have shown our bewilderment in our inability to solve the problems of unemployment, of poverty, of all sorts of social cleavages. It is not of these however that I wish to warn you. They are problems that have at least the advantage of general recognition, and I have every confidence that solutions to them will be found. What I am more worried about is the discomfort of an air-conditioned world, the monotony of television, the hardship of travel on the highspeed highways we are being promised. Already we have examples to make us uneasy. The intrusion of the radio is one. Another is the soporific treadmill of roads like the Merritt Parkway, where for over fifty miles one holds the wheel and presses the accelerator as a tedious and endless succession of precisely placed trees and bushes whiz by like a canvas backdrop in diarama. In his recent best-seller "So Little Time," John P. Marquand catches the spiritlessness of such a highway—

> "They were going along the Merritt Parkway at fifty miles an hour and soon they would turn off on Route 7.
>
> "The leaves of the newly planted trees between the concrete lanes were turning like the larger trees on either side. He was always vaguely disturbed by the Merritt Parkway and all the other parkways because once you were on them you had no way of telling that you were getting anywhere. There were no houses, just trees and bridges, trees and bridges, and no grades that were too steep. The whole thing must have cost the taxpayers a great deal more money than was necessary, but no one cared about money any more. The parkway was like a part of the new na-

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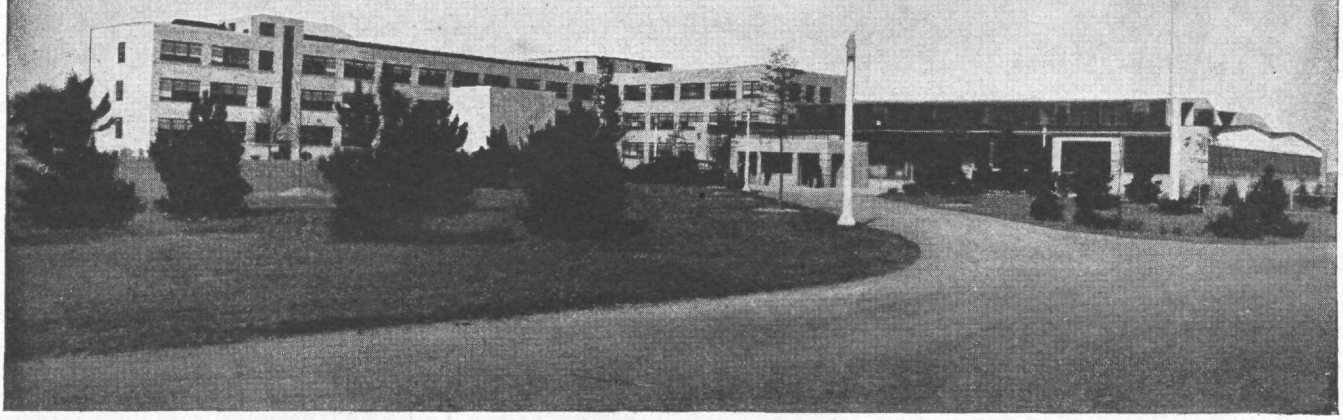

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tional thought, and it was all too easy. There were no towns, only shrubs and bushes from some nursery, and you never knew where you were until you got to Route 7."

Sameness, a Curse

Sameness is the curse of mass production. Whatever its advantage in the division of labor and in the widening of distribution, it is anything but socially efficient. For when likeness is too high valued, it tends to make for cheapness in the vulgar sense. It dulls the maker and the user. Moreover, for all our gregariousness and convention, we must assert our individuality some way. That individuality must be allowed free and healthy play, particularly in a democracy. Let us think of that before we start stamping out the chromium chairs and the stainless steel highball glasses.

The world of tomorrow will be, we hope, a world of leisure and peace. But a world of leisure and peace is not to be confused with one of mechanical routine and technical ease. It cannot be preoccupied with glittering toys and installment payments, with noisy juke boxes and electric trains. It must escape the over-excitement of rush and clatter on the one hand and the humdrum of routine, on the other. Paradoxically, twentieth-century America has combined the two for most of our fellows, who in a rush to beat the clock are hurtled underground each day, back and forth from the dullness of a dreary bedroom to the tedium of an unimaginative job. William James pointed out the viciousness of dull routine as long ago as 1910 when in his famous essay "The Moral Equivalent of War," *he warned that until peace-time life could find a place for fortitude, courage, and variety of experience, men would welcome war as an escape from peace.*

An enormous capacity to produce will be available at the end of this war. A staggering industrial potential has been established all over the world. The drive to find new goods to utilize this productive capacity will be tremendous, and we want it used. We want it used to destroy poverty and crime, to light the dark corners of our social system where now there is so much evil. We want it, for the sulfa drugs and penicillin it can give us, for plentiful food and abundant clothes, for homes with healthy children and warm hearts —for all the things that we need physiologically and sociologically. But we definitely don't want it for new frustrations. Let us weigh carefully what suits us best. Used carelessly, our great machines can destroy us. Used wisely, we will achieve an age which even Pericles could not match, for ours will be an Athens of free men with leisure for the arts of living based, not as was hers, on slavery, but on the indefatigable horsepower of technology.

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